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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/556,132	11/15/2006	Bernd Bruchmann	280143US0PCT	2494

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EXAMINER	
LEONARD, MICHAEL L	

ART UNIT	PAPER NUMBER
1796	

NOTIFICATION DATE	DELIVERY MODE
02/08/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/556,132	BRUCHMANN ET AL.	
	Examiner	Art Unit	
	MICHAEL LEONARD	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 January 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6,8-13,19 and 20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6, 8-13, 19 and 20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

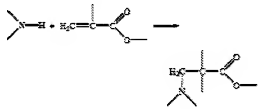
DETAILED ACTION

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-6, 8-13, and 19-20 are rejected under 35 U.S.C. 103 (a) as being unpatentable over U.S. Patent No. 5,977,284 to Reich et al. in view of U.S. Patent No. 6,376,637 to Bruchmann et al.

As to claims 1-2 and 4-5, Reich discloses a process of forming urethane (meth)acrylates (Abstract) wherein primary or secondary amino groups, such as alkanolamines, in particular, ethanolamine, propanolamine, or butanolamine undergo a Michael addition at acrylate groups in a reaction scheme disclosed below:



that produces tertiary amino groups and a final reaction product that contains two different hydroxyl groups with different reactivites, one from the alkanolamine (Column 3, lines 37-45) and one from the methacrylate that contains at least one free hydroxyl group (Column 3, lines 50-52). Reich further discloses reacting the Michael Adducts with suitable isocyanate compounds to product urethane (meth)acrylates (Column 3, lines 64-67, Column 4, lines 1-27).

Reich fails to disclose in the process above wherein the final urethane product is hyper-branched or dendritic.

Bruchmann discloses a simple process for preparing dendritic and highly branched polyurethanes, which can be achieved by exploiting the differences in reactivity of the functional groups in the compounds which are reactive towards isocyanates in order to control a selective buildup (Column 2, lines 35-40). Bruchmann further discloses the different reactivity of the functional groups of the monomers used ensures that the most reactive functional groups in each case react with the end groups of the dendrite chains and the less reactive functional groups of the monomers form the functional end groups of the next generation of the dendritic polyurethanes (Column 4, lines 1-6).

Reich and Bruchmann are analogous are because they are from the same field of endeavor with respect to polyurethane products made from polyols with different reactive functional groups.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to exploit the different reactive groups of the polyols disclosed by Reich in order to form dendritic or highly branched polyurethane as disclosed by Bruchmann. The suggestion/motivation would have been to have more of a selective control of the buildup of the polymer (Bruchmann, Colum 2, line 39) in order to form a polymer with a desired molecular weight (Bruchmann, Column 3, lines 61-62).

As to claims 3 and 11, Reich discloses aliphatic polyols (Column 3, lines 5-15).

As to claims 6 and 12-13, Reich discloses primary or secondary amino compounds having at least 1 hydroxyl group, preferably from 1 to 3 hydroxyl groups, which are used in the Michael Addition reaction (Column 3, lines 38-41).

It is noted that claims 8-9 and 19-20 claim a dendritic or hyperbranched polyurethane, all elected claims are recited in the product-by-process format by use of the language, "A dendritic or hyperbranched polyurethane obtained by..." Case law holds that: Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. See *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

To the extent that the process limitations in a product-by-process claim do not carry weight absent a showing of criticality, the reference discloses the claimed product in the sense that the prior art product structure is seen to be no different from that indicated by the claims.

As to claim 10, Reich discloses that the urethane meth(acrylates) are suitable for use as or in radiation-curable materials, such as adhesives and printing inks (Column 4, lines 60-67). Furthermore, Bruchmann discloses wherein the dendritic or highly branched polyurethanes are used as crosslinkers for polyurethane systems or as building blocks for other polyaddition or polycondensation polymers. Further possible uses are as phase compatibiziers, rheological auxiliaries, thioxtropes, nucleating agents or as catalyst supports or carriers for active compounds (Column 5, lines 10-17).

Claims 1-6, 8-13, and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,786,682 to Perez in view of U.S. Patent No. 6,376,637 to Bruchmann et al. for the reasons set forth in the last Office action.

Response to Arguments

The applicants arguments fail to place the claims in condition for allowance because the Perez document does disclose in some situations wherein the Michael adduct as formed would contain a tertiary nitrogen and at least two hydroxyl groups of differeing reactivity because the Perez reference discloses the same amine containing adducts as the instant disclosure as well as hydroxyl containing acrylate compounds, wherein the Michael Addition reactio between the two would result in a compound containing a tertiary nitrogen and a least two hydroxyl groups of differeing reactivity. The Bruchmann reference was brought in to specifically point to isocyanate-reactive compounds having different hydroxyl reactivity so that the reaction conditions are selected so that only certain reactive groups react with one another in each reaction step (Column 2, lines 40-48). Furthermore, Bruchmann discloses a simple process for preparing dendritic and highly branched polyurethane which can be carried out using readily available raw materials and the this object is achieved by exploiting the differences in the reactivity of the isocyanate groups of diisocyanates or polyisocyanates or of the functional groups in the compounds which are reactive toward

isocyanates in order to control a selective buildup of the polymers (Column 2, lines 30-39).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL LEONARD whose telephone number is (571)270-7450. The examiner can normally be reached on Mon-Fri 7:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on 571-272-1398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MICHAEL LEONARD/
Examiner, Art Unit 1796

/Milton I. Cano/
Supervisory Patent Examiner, Art Unit 1796